

WHAT IS CLAIMED IS

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1. A method of allocating radio resources, in a base station, to the base station and a mobile station, comprising the steps of:

obtaining a ratio between traffic of
10 uplink for transmission from the mobile station to
the base station and traffic of downlink for
transmission from the base station to the mobile
station such that the ratio reflects empirical data;
and
15 allocating the radio resources to the
uplink and the downlink according to the obtained
ratio.

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2. The method as claimed in claim 1,
further comprising a step of dividing time into a
plurality of time periods, wherein said step of
25 obtaining a ratio obtains the ratio with respect to
each one of the time periods by deriving the ratio
from traffic of the uplink of a corresponding time
period and traffic of the downlink of the
corresponding time period.

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3. The method as claimed in claim 2,
wherein said step of obtaining a ratio obtains the
ratio by averaging a ratio between traffic of the
uplink and traffic of the downlink over a first
5 predetermined period with respect to each one of the
time periods.

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4. The method as claimed in claim 2,
further comprising the steps of:

obtaining an instantaneous ratio between
traffic of the uplink and traffic of the downlink
15 for a second predetermined period immediately
preceding a present instant where the second
predetermined period is shorter than the first
predetermined period; and

obtaining a weighted average of the ratio
20 averaged over the first predetermined period and the
instantaneous ratio by weighting the ratios with
respective weighting factors, wherein said step of
allocating the radio resources allocates the radio
resources to the uplink and the downlink according
25 to the weighted average.

30 5. The method as claimed in claim 1,
further comprising a step of transmitting, to the
mobile station, information about the radio
resources with respect to at least one of the uplink

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and the downlink.

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6. The method as claimed in claim 1,
further comprising a step of allocating transmission
power according to communication quality required
for the uplink and the downlink.

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7. A base station apparatus which
15 communicates with a mobile station apparatus,
comprising:

a computation unit which obtains a ratio
between traffic of uplink for transmission from the
mobile station to the base station and traffic of
20 downlink for transmission from the base station to
the mobile station such that the ratio reflects
empirical data; and

an allocation unit which allocates the
radio resources to the uplink and the downlink
25 according to the obtained ratio.

30 8. The base station apparatus as claimed
in claim 7, wherein time is divided into a plurality
of time periods, and said computation unit obtains
the ratio with respect to each one of the time

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periods by deriving the ratio from traffic of the uplink of a corresponding time period and traffic of the downlink of the corresponding time period.

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9. The method as claimed in claim 8,
wherein said computation unit further obtains the
10 ratio by averaging a ratio between traffic of the uplink and traffic of the downlink over a first predetermined period with respect to each one of the time periods.

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10. The method as claimed in claim 8,
wherein said computation unit further obtains an
20 instantaneous ratio between traffic of the uplink and traffic of the downlink for a second predetermined period immediately preceding a present instant where the second predetermined period is shorter than the first predetermined period, and
25 obtains a weighted average of the ratio averaged over the first predetermined period and the instantaneous ratio by weighting the ratios with respective weighting factors, and wherein said allocation unit allocates the radio resources to the
30 uplink and the downlink according to the weighted average.

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11. The method as claimed in claim 7,
further comprising a reporting control unit which
transmits, to the mobile station, information about
the radio resources with respect to at least one of
5 the uplink and the downlink.

10 12. The method as claimed in claim 7,
wherein the allocation unit allocates transmission
power according to communication quality required
for the uplink and the downlink.